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NUTRACEUTICALS
CHALLENGES AND OPPORTUNITIES FOR THE NEW MILLENNIUM
THAT AFFECT CONSUMERS AND HEALTHCARE PROFESSIONALS WHO USE AND
RECOMMEND NUTRACEUTICALS

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In the past five years, many dramatic changes have occurred that are related to wellness, health and the practice of medicine. With the growth of managed care, especially through Health Maintenance Organizations (HMO's), and the aggressive positioning of major health insurance companies, we have seen in some instances an improvement in efficiency and decreased cost in certain aspects of medical care. However, one of the most serious costs of these changes appears to be a growing frustration on the part of both patients and medical practitioners. As a result of these and other dynamics, the United States healthcare delivery system is in a state of flux and, at times, it is in conflict. This has lead to a greater emphasis on outpatient care and preventive medical programs, which are struggling to meet the needs of the rapidly increasing number of now middle-aged "Baby Boomers" that are continually seeking, if not demanding, a better quality of life.

With the passage of the Dietary Supplement Health and Education Act (DSHEA) in 1994, Congress freed dietary supplement manufactures from the stringent FDA guidelines used in the regulation of pharmaceuticals, provided that dietary supplements are not promoted for traditional pharmaceutical uses. Not surprisingly, this Act has resulted in some confusion regarding nutraceutical product advertising, as well as labeling. At times, DSHEA has resulted in the dissemination of misleading information concerning product activity and quality.

More importantly, it is often difficult for the consumer or healthcare professional to obtain the necessary confidence in a given nutraceutical product that they use or choose to recommend. And, of course, manufacturers and suppliers of nutraceutical supplements themselves have contributed in many instances to the

serious problem of not only what information concerning a product should be provided consumers but also how that information should be provided.

Another issue that has developed is the lack of educational training for healthcare professionals in the field of complementary or alternative medicine. It is estimated that as many as 70 percent of Americans now purchase and use nutraceutical products on a regular basis. Above all, they would like to turn primarily to their physician for advice and guidance. Unfortunately, physicians for the most part remain untrained and uneducated on how to counsel their patients on the use of nutraceuticals.

Consumers, especially the Baby Boomers, are turning to nutraceutical supplements in order to have additional freedom in taking some control over their own health. It is an inherent basic desire of everyone to have as much good health as is achievable, to live as long as is possible, and to compress into the shortest duration during our lifetime any chronic illness, impairment, or disability. In unprecedented numbers, larger and larger segments of the American population at all age levels are turning to nutraceutical and dietary supplements in the quest of these goals. The critical issue for the nutraceutical industry involves developing a science-based perspective and regard for claim substantiation that will justify this generational turn toward nutraceuticals.

Preliminary studies are showing that nutraceutical products can in many instances help the consumer achieve some of these goals if they are selected wisely and consumed properly, and if the products, especially herbals, are standardized to contain the ingredients necessary to provide the promised activity. For example, in a

double-blind controlled study by Dr. Larry Clark and colleagues at the University of Arizona Cancer Center, it was demonstrated that dietary supplementation with selenium might reduce prostate cancer by as much as 30%. This can provide a longer life and at the same time reduce the healthcare costs for thousands of men in this country. This initial study has been expanded to five countries and will cover other forms of cancer in more extensive investigations.

All of this may sound promising, but there is a real challenge that the consumer now faces when they choose to consider using a dietary supplement. We must be extraordinarily careful not to overstate the state of science. To this end, we must be patient, encourage research, and responsibly evaluate that research.

One area, however, that we can act in right away involves product quality. As these products are not currently regulated for content, purity and manufacturing quality, there are three important questions that the consumer needs answers to when purchasing a dietary supplement:

- Is the product manufactured under current Good Manufacturing Practices (cGMP's)?
- Does the product contain a standardized extract that is validated by scientific and clinical studies?
- How consumers know that the products they take actually contain the required dosage of ingredients required to produce the desired results as promised in marketing materials provided by companies?
- Most importantly, does the product have integrity?

Need for Third Party Validation

To whom can the consumers of this country turn for advice and consultation on the proper use of nutraceutical supplements? In a survey conducted by Dr. David Eisenberg, it was found that three-quarters or more of the consumers surveyed would prefer to have this guidance provided by their physician. Unfortunately, for now at least, this remains a wishful desire because of a lack of proper training provided to physicians and to pharmacists on the proper use of nutraceuticals. A study published in the *New England Journal of Medicine* revealed an alarming statistic. Seventy-five percent of individuals using complementary medicine, including nutraceuticals, neglect to share this information with their conventional physicians! A consumer awareness campaign focused on encouraging consumers to share this information with their physicians should be considered. A joint venture by organizations such as the American Nutraceutical Association, the American Medical Association and the Consumers Healthcare Products Association, in cooperation with FDA, could be very beneficial to consumers.

As the use of nutraceuticals by consumers in the United States is increasing, both consumers and healthcare professionals should be concerned about the trend toward self-diagnosis and self-management of disease by consumers. Herbal and nutraceutical products are sometimes an excellent approach in personal wellness programs, but their use in self-diagnosed chronic disorders may result in inappropriate treatments and dangerous management delays. The risk of interactions with pharmaceuticals and foods is enormous. It is imperative that we facilitate and enhance the training of healthcare professionals in the subjects dealing with the proper use of nutraceuticals and herbal products. St. John's wort may affect the body's structure and function as would an antidepressant, but how many patients can

differentiate between depression and anxiety? Both are extremely common and debilitating disorders for which the treatments are quite different. Furthermore, how much of that which is now labeled as "St John's Wort" in this country contains any active nutraceutical constituents?

As another example, large numbers of patients with congestive heart failure are self-treating themselves with nutraceutical containing products, such as hawthorn, an herb with an antihypertensive action. Patients cannot accurately judge, however, how well controlled their blood pressure is based on how they feel; it requires careful blood pressure measurements. In some cases, this monitoring is being shifted to pharmacists (most of whom own independent pharmacies) who are becoming knowledgeable in the use of nutraceuticals, and are coordinating their patients' use of these products with physicians.

As an additional illustration, the enormous popularity of saw palmetto for benign prostatic hyperplasia appears to be a benefit at first glance, but if improperly used in the case of self-diagnosing, it can be a major problem for consumers. Patients cannot reliably differentiate the symptoms of this condition from undiagnosed prostate cancer, for which a delay in diagnosis can be the difference between survival and death. It could be extremely dangerous for patients, therefore, to use a dietary supplement/nutraceutical for its purported functional effect unless they are under the care and supervision of their primary physician or urologist.

Another concern on the part of consumers is the question: Do nutraceuticals "perform as advertised" and are they safe? In the Winter edition of the *Journal of the American Nutraceutical Association*, there was a landmark study published on

commonly used nutraceuticals that summarized the results of a six-year study by Darryl M. See, MD, at the University of California, Irvine. His *in vitro* screening study of 196 natural products for toxicity and activity gave us a preliminary answer to these questions. While his study was *in vitro*, not *in vivo*, it utilized well accepted assays employed by the pharmaceutical and medical communities for the activity parameters of antioxidant, antiviral activity, and immune (NK Cell) system activity. Only five products tested appeared to be beneficial by all three tests for nutraceutical activity, and at the same time exhibited a lack of toxicity and a lack of potential drug interaction. An additional 71 products of the 196 studied demonstrated at least some potential benefit by at least one of the three activity tests employed. A serious potential for toxicity and potential drug interaction was found in over half of the products tested by Dr. See. While this study was limited, it was a landmark initial step in the right direction.

What conclusions can be drawn from the study by Dr. See? For one, “let the buyer beware.” Without outside or self-regulation, we are in a position of blindly examining the trust we place in those who manufacture and distribute nutraceuticals. For the manufacturers of nutraceutical products, hopefully this study will be a message for “corporate responsibility,” for self-testing, and for self-regulation of the products they generate. To do otherwise will be to compromise the integrity of the process and the fundamental needs to responsibly substantiate claims and assiduously assure safety.

Issues that should be of concern to both consumers and healthcare professionals regarding the use of nutraceuticals.

As we approach the close of this century, there are a number of issues that deal with nutraceuticals that the American Nutraceutical Association feels are of great importance for both consumers as well as healthcare professionals that are asked to validate or recommend products to their patients. Here is a brief overview of the most critical issues:

Quality Assurance. Manufacturers and distributors need guidelines for current Good Manufacturing Practices (cGMP) and production standards to protect the consumer. The FDA has been mandated and is the logical choice to develop these regulations, with input from trade associations, such as the American Herbal Products Association (AHPA), the Consumer Healthcare Products Association (formerly the Non-Prescription Drug Manufacturers Association, NDMA), the Council for Responsible Nutrition (CRN), and the National Nutritional Foods Association (NNFA).

Standardization. Both source material suppliers and some nutraceutical manufacturers are doing much in this area. This is a consumer driven issue, as a company's marketing strategy will benefit from products that are standardized, reliable, and dependable. This is a more complex challenge than most consumers and health care professionals realize. For example, growing conditions and harvesting can have profound effects on active constituent concentration of certain nutraceuticals. And just what bioactive markers for dietary supplement constituents can and need to be measured? Clear answers to these issues are needed.

Product Stability. Most nutraceuticals are derived from natural sources that are prone to degradation. Once active components are standardized, their stability and

shelf life can be determined. Nutraceuticals of the future must be labeled with expiration dates and recommended storage instructions.

Bioavailability. Manufacturers of pharmaceuticals are more than well aware of this issue. There is much that is unknown about the assimilation of natural products. When should they be taken... with food... without... on an empty stomach? What dosage form is best... tablet, capsule, tincture? What is the pharmacokinetics of nutraceuticals? These are areas that must be explored, and the answers generated must be shared with the consumer in an effective manner and with healthcare professionals.

Clinical Validation. This is an essential and critical priority for nutraceuticals. Safety and clinical nutraceutical activity are definite consumer concerns. Much progress is being made in this arena, but still much more needs to be done. Peer reviewed publications and scientifically-based forums, such as *The Journal of the American Nutraceutical Association* (JANA), are welcomed by clinicians and consumers alike. And nutraceutical companies are responding by sponsoring scientifically sound, publishable clinical studies. This must become more than a trend, it must become a way of doing business.

As a nation, we are going to continue to buy and to consume nutraceuticals in progressively increasing numbers. What we need most are safe products with true demonstrated effects on the body's function. The consumer needs assurances that what is purported to be there is actually in the product. We need to know that the "first rule of medicine" for those who deliver nutraceutical healthcare products – "to do no harm" – is operative. We need to be able to trust – to trust that those who

manufacture nutraceuticals do so appropriately and that those who market and distribute them do so honestly. We also need to be able to trust healthcare professionals to whom the consumers of nutraceuticals will turn to for advice and guidance; this means that these healthcare professionals will have to become educated and more knowledgeable about nutraceutical products. We can gain that trust by reliance on sound science-based data, by documenting safety, by assuring product integrity, and by never misleading consumers. In summary, both consumers and healthcare professionals need to know that nutraceuticals are produced and marketed with integrity.

The American Nutraceutical Association, whose members are both healthcare professionals and consumers, is dedicated to these objectives and is currently pursuing programs to address these issues. We welcome the opportunity to work with FDA on these and other issues related to dietary supplements and nutraceuticals that impact both consumers and healthcare professionals.

The American Nutraceutical Association is an alliance of individuals with interest in nutraceutical science, technology, marketing and production. There are over 3,500 members in eight countries. The ANA was established in 1997 to develop and provide educational materials and continuing education programs for healthcare professionals on nutraceuticals. ANA publishes a quarterly newsletter, *The Grapevine*, and the *Journal of the American Nutraceutical Association (JANA)*.

Visit the ANA website at www.Americanutra.com for more information on the organization.

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